

REMARKS

Claims 1-8 are pending and rejected in this application pursuant to a decision by The Board of Patent Appeals and Interferences dated September 20, 2005. Claims 1, 4, 6 and 7 are amended hereby.

Responsive to the rejection of claim 1 based upon Motorola Reference Data Sheet for the MC4344/MC4044 Phase-Frequency Detector (Motorola), Applicants have amended claim 1 and submit that claim 1 and claims 2, 3, 5 and 8 depending therefrom are now in condition for allowance.

Motorola indicates that the circuit is useful for a range of phase-locked loop applications. Phase detector #1 is intended for uses in systems requiring zero frequency and phase difference at lock. Phase detector #2 is used if quadrature lock is desired (page 6-20). Relative to phase detector #1, loop lock-up occurs when both outputs U1 and D1 remain high. This occurs only when all the negative transitions on the reference input and the variable or feedback input coincide (page 6-22). Relative to phase detector #2 there is a quadrature relationship between the reference input and the variable or feedback input. Any deviation from a 50% duty cycle on the inputs appear as a phase error (page 6-23).

In contrast claim 1, as amended, recites in part:

generating a control signal dependent upon said comparison without regard to phase locking said feedback pulse train to said reference signal;

(Emphasis added). Applicants submit that such an invention is neither taught, disclose nor suggested by Motorola or any of the other cited references, alone or in combination, and has distinct advantages thereover.

Motorola discloses a phase locking circuit that locks the phase of an input signal to that of a reference signal or to a quadrature lock, which causes the output to be locked at a 90° phase shift from the reference signal. Applicants invention does not determine a phase error and

regulates a target system without regard to any phase locking. In contrast Motorola discloses the phase locking of an input signal to a reference signal. Therefore Motorola fails to disclose, teach or suggest generating a control signal dependent upon a comparison without regard to phase locking the feedback pulse train to the reference signal, as recited in claim 1.

An advantage of Applicants' invention is that less space is needed for the frequency comparison circuitry than the phase detection circuitry of the reference, since comparison of the relative phases of two signals and the generation of a phase error correction signal are not necessary. Another advantage of Applicants' invention is that phase differences are not detected and not corrected; as a result thereof the circuitry of Applicants' invention has a reduced cost of implementation. Another advantage of Applicants' invention is that there is less electrical noise in the control system than is present in phase detection and control circuits. For the foregoing reasons, Applicants submit that claim 1 and claims 2, 3, 5 and 8 depending therefrom are now in condition for allowance, which is hereby respectfully requested.

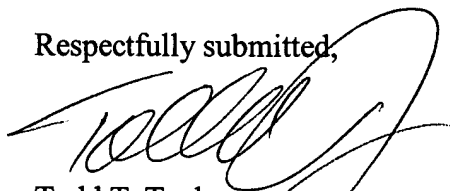
Even though the Decision of the Appeal indicated that the application of the Motorola reference was only relative to independent claim 1, Applicants have additionally amended claims 4, 6 and 7 to include the phrase, "without regard to phase locking said feedback pulse train to said reference signal" in a manner similar to that incorporated into claim 1. For the same reasons, stated above relative to claim 1, Applicants submit that claims 4, 6 and 7 are additionally now in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



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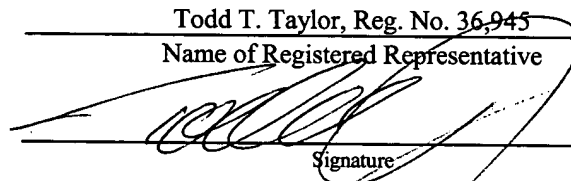
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on: November 18, 2005.

Todd T. Taylor, Reg. No. 36,945
Name of Registered Representative



Signature

November 18, 2005

Date